

Claims

1-35. (Cancelled)

36. A stent-graft including:

a structural layer comprising a bioabsorbable, radially compressible and radially expandable annealed tubular body having open ends and a sidewall structure having openings therethrough; and

a compliant graft layer cooperating with the structural layer to form a stent-graft implantable at a treatment site in a body lumen, wherein the compliant graft layer tends to conform to the tubular body as the tubular body radially expands and contracts;

wherein the structural layer is radially expandable when deployed at the treatment site and thereby is adapted to fix the stent-graft at the treatment site and maintain patency of the body lumen;

characterized in that the structural layer further is adapted to be at least partially absorbed *in-vivo* following deployment, and the graft layer is adapted to remain at the treatment site while the tubular body is so absorbed.

37. The stent-graft of claim 36 wherein:

the structural layer is radially self-expandable and adjustable between a nominal state and a reduced-radius state.

38. The stent-graft of claim 37 wherein:

the structural layer when deployed at the treatment site is adapted to exert a radial force to so fix the stent-graft and so maintain patency, and the radial force is gradually reduced as the structural layer is so absorbed.

39. The stent-graft of claim 36 wherein:

the tubular body comprises a plurality of elongated, helically wound bioabsorbable filaments.

40. The stent-graft of claim 36 further including:

an adhesive for bonding the tubular body and the graft layer at least over a coextensive portion of the tubular body and the graft layer.

41. The stent-graft of claim 40 wherein:

the adhesive is bioabsorbable.

42. The stent-graft of claim 40 wherein:

the adhesive occupies only proximal and distal end portions of said coextensive portion.

43. The stent-graft of claim 36 wherein:

the tubular body consists essentially of a material selected from the group consisting of: poly (alpha-hydroxy acid), PGA, PLA, PLLA, PDLA, polycaprolactone, polydioxanone, polygluconate, polylactic acid-polyethylene oxide copolymers, modified cellulose, collagen, poly (hydroxybutyrate), polyanhydride, polyphosphoester, poly (amino acids), or combinations thereof.

44. The stent-graft of claim 36 wherein:

the stent-graft is adapted to be permeated with body tissue.

45. The stent-graft of claim 36 wherein:

the graft layer is disposed on at least one of an inside surface of the structural layer and an outside surface of the structural layer.

46. The stent-graft of claim 36 wherein:

the structural layer is comprised of a plurality of interbraided bioabsorbable structural filaments.

47. The stent-graft of claim 46 wherein:

the graft layer is comprised of a plurality of interbraided graft filaments.

48. The stent-graft of claim 36 wherein:

the graft layer is adapted to remain permanently at the treatment site.

49. The stent-graft of claim 48 wherein:

the graft layer is adapted to form a composite wall with body tissue at the treatment site.

50. The stent-graft of claim 36 wherein:

the graft layer comprises a plurality of interwoven components selected from the group of components consisting of: fibers, monofilaments, multi-filaments, and yarns.

51. The stent-graft of claim 36 wherein:

the graft layer consists essentially of a material selected from the group consisting of: PET, ePTFE, PCU, PU and combinations thereof.

52. A stent-graft including:

a structural layer comprising a bioabsorbable, radially compressible and radially expandable tubular body having open ends, a sidewall structure having openings therethrough, an inside surface, and an outside surface; and

a first graft layer disposed on at least one of the inside surface and the outside surface, cooperating with the structural layer to form a stent-graft implantable at a treatment site in a body lumen, said first graft layer being more compliant than the structural layer and tending to conform to the structural layer as the structural layer radially expands and contracts;

wherein the structural layer is radially expandable when deployed at the treatment site to fix the stent-graft at the treatment site and maintain patency of the body lumen, and further is adapted to be at least partially absorbed *in-vivo* following deployment; and

wherein the first graft layer is substantially non-absorbable and adapted to remain at the treatment site.

53. The stent-graft of claim 52 wherein:

the tubular body is radially self-expandable and adapted to exert a radial force when deployed at the treatment site to so fix the stent-graft and so maintain patency, and the radial force is gradually reduced as the structural layer is so absorbed.

54. The stent-graft of claim 52 wherein:

the structural layer is adapted to be completely absorbed *in-vivo* following deployment.

55. The stent-graft of claim 52 wherein:

the first graft layer is disposed on the inside surface.

56. The stent-graft of claim 55 further including:

a second graft layer disposed on the outside surface, said second graft layer being more compliant than the structural layer and tending to conform to the structural layer as the structural layer radially expands and contracts.

57. The stent-graft of claim 52 wherein:

the first graft layer is disposed on the outside surface.

58. The stent-graft of claim 52 further including:

an adhesive for bonding the structural layer and the first graft layer.

59. The stent-graft of claim 58 wherein:

the adhesive is bioabsorbable.

60. The stent-graft of claim 58 wherein:

the adhesive occupies only proximal and distal end portions of a coextensive portion over which the structural layer and the first graft layer are coextensive with one another.

61. The stent-graft of claim 52 wherein:

the structural layer is comprised of a plurality of structural filaments braided together.

62. The stent-graft of claim 61 wherein:

the first graft layer is comprised of a plurality of interbraided graft filaments consisting essentially of a material selected from the group consisting of: PET, ePTFE, PCU, PU, and combinations thereof.

63. The stent-graft of claim 52 wherein:

the first graft layer is adapted to form a composite wall with body tissue at the treatment site.

64. The stent-graft of claim 52 wherein:

the tubular body consists essentially of a material selected from the group consisting of: poly (alpha-hydroxy acid), PGA, PLA, PLLA, PDLA, polycaprolactone, polydioxanone, polygluconate, polylactic acid-polyethylene oxide copolymers, modified cellulose, collagen, poly (hydroxybutyrate), polyanhydride, polyphosphoester, poly (amino acids), and combinations thereof.

65. The stent-graft of claim 52 wherein:

the first graft layer is adapted to remain permanently at the treatment site.

66. A process for fabricating a stent-graft, including:

disposing a tubular body comprising bioabsorbable material on a mandrel;

disposing a compliant and substantially non-absorbable graft layer on the mandrel such that one of the tubular body and the graft layer surrounds the other over at least a coextensive portion; and

with the tubular body and the graft layer so disposed, adhering the graft layer to the tubular body to form a stent-graft in which the tubular body is radially expandable and contractible and the graft layer tends to conform to the tubular body as the tubular body radially expands and contracts.

67. The process of claim 66 further including:

forming the tubular body by helically winding a plurality of bioabsorbable filaments.

68. The process of claim 67 further including:

annealing the tubular body at a temperature between a glass transition temperature of the bioabsorbable filaments and a melting point of the bioabsorbable filaments.

69. The process of claim 68 wherein:

said annealing of the tubular body is performed after said adhering the graft layer to the tubular body.

70. The process of claim 67 wherein:

said forming the bioabsorbable tubular body includes interbraiding the filaments.

71. The stent-graft of claim 66 further including:

annealing the tubular body at a temperature between the glass transition temperature of the bioabsorbable material and a melting point of the bioabsorbable material.

72. The process of claim 66 wherein:

said disposing the graft layer on the mandrel includes surrounding the tubular body with the graft layer.

73. The process of claim 66 wherein:

said disposing the graft layer on the mandrel includes surrounding the graft layer with the tubular body.

74. The process of claim 66 wherein:

forming the tubular body includes imparting a radially compressible and self-expandable character to the tubular body.

75. The process of claim 66 wherein:

said adhering the graft layer to the tubular body comprises applying an adhesive only to proximal and distal end portions of the coextensive portion.

76. The process of claim 66 wherein:

said adhering the graft layer to the tubular body includes using a bioabsorbable adhesive.